

78-051A-18E  
PIONEER VENUS  
HOURLY AVERAGED PLASMA DATA

#725

78-051A-18F  
PIONEER VENUS  
PLASMA SUMMARY DATA

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## **1. INTRODUCTION:**

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

## 2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

*When printing, special settings may be required to make the text box appear on the printed output.*

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC INFORMATION SYSTEM:

<http://nssdc.gsfc.nasa.gov/nmc/>

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

- a. Associated Documents      To find associated documents you will need to know the document ID number and then click here.  
<http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/>

- b. Core Catalog Materials

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PIONEER VENUS

HOURLY AVERAGED PLASMA DATA

THIS DATASET CONSISTS OF 1 TAPE. THE D TAPE IS 9-TRACK, 6250 BPI, BINARY, AND THE C TAPE IS 3480 CARTRIDGE. THIS TAPE WAS CREATED ON THE VAX, VIA THE VAX COPY COMMAND. THE TPAE IS LABELED AND IT'S LABELED NAME IS PVOHAV. THE D NUMBER ALONG WITH IT'S C NUMBER IS AS FOLLOWS:

<u>D#</u>	<u>C#</u>	<u>FILES</u>	<u>TIMESPANS</u>
D#88029	C#030218	1	09/25/78-12/31/87

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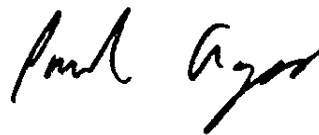
September 13, 1988

Dear Ralph,

Here is the latest Pioneer Venus Orbiter Plasma Analyser data set. It consists of two VAX tapes, a 'summary data' tape and an 'hourly average data' tape. A description of the organisation, format, and contents of these tapes is enclosed. This is the most complete and up to date set of OPA summary and hourly average data available.

If it is possible, I would appreciate it if you could acknowledge receipt of these tapes. Thank you.

Sincerely,



Paul Gazis

enc

Preliminary Pioneer Venus OPA Data Set

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General Description

The Pioneer Venus OPA data set is stored on two 6250 BPI tapes. The tapes are VAX ANSI tapes containing files created via the COPY command. These files can be read on a VAX using the following command sequence:

```
ALLOCATE {tape drive:}  
MOUNT/DEN=6250 {tape drive:} {volume name}  
COPY {tape drive:filespec} *.*
```

There are two types of data: summary data and hourly average data. Summary consists of a set of plasma parameters for every spectrum returned by the OPA instrument. Hourly average data, of course, consists of hourly averages of the summary data.

The data are stored as unformatted records. All words are stored as REAL\*4. Summary data records are 27 words long and hourly average records are 30 words long. Several different forms of OPEN statement will serve to open these files. Two possibilities are:

```
OPEN( UNIT = LUN,                ! Preferred  
+     FILE = {filespec},  
+     FORM = 'UNFORMATTED',  
+     READONLY,  
+     STATUS = 'OLD')
```

or

```
OPEN( UNIT = LUN,  
+     FILE = {filespec},  
+     FORM = 'UNFORMATTED',  
+     RECORDTYPE = 'FIXED',  
+     LRECL = {27 or 30},  
+     READONLY,  
+     STATUS = 'OLD')
```

It should be noted that this is a PRELIMINARY version of the Pioneer Venus data set. As such it has several limitations:

- 1) Each record contains space for magnetic field data, trajectory data, and additional parameters. This data has not yet been added to the data set and these words are filled with zeros.
- 2) This data has not been edited in any way. Points which appear to be unreliable have been flagged in the summary data and have been excluded from the hourly averages however no attempt has been made to remove data taken when the spacecraft was inside the Venusian bow shock. The user is cautioned that data taken inside the Venusian bow shock may not be reliable. **IT IS THE RESPONSIBILITY OF THE USER TO EXCLUDE DATA TAKEN INSIDE THE VENUSIAN BOW SHOCK!!!**
- 3) All data are given in the spacecraft frame. No attempt has been made to correct velocities and flow angles for aberration or for unusual orientations of the spacecraft.

Contents

The contents of these data sets are:

PV19xx.DAT - Summary data, 27-word records



Word	Variable	Comments
1	SCID ✓	Spacecraft ID (ASCII)
2	JYDD ✓	Date of record (YYDDD)
3	NSEC	Time of day at s/c at start of record (seconds)
4	spare word	
5	spare word	
6	spare word	
7	CHISQ	Chi-square of fit
8	BADREC	Record quality (0-good, 10-20 doubtful, 100 bad)
9	BAMP	B  (empty)
10	BMAG	mag B (empty)
11	BAZM	Azimuthal angle of B-field (empty)
12	BPOL	Polar angle of B-field (empty)
13	DBAMP	Uncertainty in  B  (empty)
14	DBMAG	Uncertainty in mag B (empty)
15	DBAZM	Uncertainty in azimuthal angle of B-field (empty)
16	DBPOL	Uncertainty in polar angle of B-field (empty)
17	TEM	Proton temperature (K)
18	DEN	Density (cm <sup>-3</sup> )
19	VEL	Bulk speed (km-sec <sup>-1</sup> )
20	AZM	Azimuthal flow angle (degrees)
21	POL	Polar flow angle (degrees)
22	DTEM	Uncertainty in proton temperature (K)
23	DDEN	Uncertainty in density (cm <sup>-3</sup> )
24	DVEL	Uncertainty in bulk speed (km-sec <sup>-1</sup> )
25	DAZM	Uncertainty in azimuthal flow angle (degrees)
26	DPOL	Uncertainty in polar flow angle (degrees)
27	JPROC	Date of processing (YYDDD)

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PVOHOUR.DAT - Hourly averages, 30-word records

Word	Variable	Comments
1	SCID	Spacecraft ID (ASCII)
2	JYDD	Date of record (YYDDD)
3	NHR	Hour of day at s/c at start of record (0 for daily averages)
4	spare word	
5	spare word	
6	spare word	
7	NBREC	Number of records in B average (empty)
8	NSWREC	Number of records in SW average (questionable count 1/2)
9		B  (empty)
10	BMAG	mag B (empty)
11	BAZM	Azimuthal angle of B-field (empty)
12	BPOL	Polar angle of B-field (empty)
13		RMS dispersion in  B  (empty)
14	RBMAG	RMS dispersion in mag B (empty)
15	RBAZM	RMS dispersion in azimuthal angle of B-field (empty)
16	RBPOL	RMS dispersion in polar angle of B-field (empty)
17	TEM	Proton temperature (K)
18	DEN	Density (cm <sup>-3</sup> )
19	VEL	Bulk speed (km-sec <sup>-1</sup> )
20	AZM	Azimuthal flow angle (degrees)
21	POL	Polar flow angle (degrees)
22	RTEM	RMS dispersion of proton temperature (K)
23	RDEN	RMS dispersion of density (cm <sup>-3</sup> )
24	RVEL	RMS dispersion of bulk speed (km-sec <sup>-1</sup> )
25	RAZM	RMS dispersion of azimuthal flow angle (degrees)
26	RPOL	RMS dispersion of polar flow angle (degrees)
27	spare word	
28	spare word	
29	spare word	
30	spare word	

Description of Pioneer Venus OPA hourly average tape

Tape name: PVOHAV

Acronym: Pioneer Venus Orbiter Hourly AVerage

Contents: Pioneer Venus Orbiter plasma hourly averaged data for 1978-1987. The contents and organisation of this data set are described in the attached document.

Tape organisation: 6250 bpi VAX ANSI tape. Mount using

MOUNT/DEN=6250 [tapedrive:] PVOHAV

Volume name: PVOHAV

File organisation: One unformatted file produced using the COPY command.

File name	Contents
PVOHOUR.DAT	Hourly averaged data for 1978-1987

Record organisation: Described in the attached document.

Cautions:

- 1) This version of the data set does not contain any magnetic field data. The corresponding words in each record are filled with zeros as described in the attached document.
- 2) PARAMETERS MEASURED INSIDE THE VENUSIAN BOWSHOCK SHOULD NOT BE REGARDED AS RELIABLE!!! Data taken inside the Venusian bow shock have not been flagged or marked in any way in this version of the data set. It is the responsibility of the user to identify and exclude these points, either by reference to magnetic field observations or some idealised model of the Venusian bow shock.

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Pioneer Venus Summary Data



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PIONEER VENUS

PLASMA SUMMARY DATA

THIS DATASET CONSISTS OF 1 TAPE. THE D TAPE IS 9-TRACK, 6250 BPI, BINARY. THE C TAPES ARE 3480 CARTRIDGES. THIS TAPE WAS CREATED ON VAX VIA THE VAX COPY COMMAND. IT IS A LABELED TAPE, WITH LABEL NAME, PVOSUM. THE D AND C NUMBERS ALONG WITH THEIR TIME SPANS ARE AS FOLLOWS:

D#	C#	FILES	TIMESPANS
<u>D-88030</u>	<u>C-030219</u>	<u>10</u>	<u>09/25/78-12/31/87</u>

Description of Pioneer Venus OPA summary tape

Tape name: PVOSUM

Acronym: Pioneer Venus Orbiter SUMmary data

Contents: Pioneer Venus Orbiter plasma summary data for 1978-1987. The contents and organisation of this data set are described in the attached document.

Tape organisation: 6250 bpi VAX ANSI tape. Mount using

MOUNT/DEN=6250 [tapedrive:] PVOSUM

Volume name: PVOSUM

File organisation: Ten unformatted files produced using the COPY command.

File name	Contents
PV1978.HAV	Summary data for 1978
PV1979.HAV	Summary data for 1979
PV1980.HAV	Summary data for 1980
PV1981.HAV	Summary data for 1981
PV1982.HAV	Summary data for 1982
PV1983.HAV	Summary data for 1983
PV1984.HAV	Summary data for 1984
PV1985.HAV	Summary data for 1985
PV1986.HAV	Summary data for 1986
PV1987.HAV	Summary data for 1987

Record organisation: Described in the attached document.

Cautions:

- 1) This version of the data set does not contain any magnetic field data. The corresponding words in each record are filled with zeros as described in the attached document.
- 2) PARAMETERS MEASURED INSIDE THE VENUSIAN BOWSHOCK SHOULD NOT BE REGARDED AS RELIABLE!!! Data taken inside the Venusian bow shock have not been flagged or marked in any way in this version of the data set. It is the responsibility of the user to identify and exclude these points, either by reference to magnetic field observations or some idealised model of the Venusian bow shock.

*See also p. 1 + 2 from*

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HEX DUMP OF PV1978.SUM

D88030

RECORD 1 110 BYTES

*TS, 2A 9-25-78*

( 0)	<del>03005056</del>	<del>4F209848</del>	<del>000E7A47</del>	AA560000	00000000	00000000	0000C944	F8F30000	00000000	00000000
( 40)	00000000	00000000	00000000	00000000	00000000	00000000	0000EB48	600A9D42	805F5545	CC8E9641
( 80)	COA32741	B8428846	B8A23340	9EAA7640	19AFC53E	50D6B03F	3C9A0000	0000		

(18F)

HEX DUMP OF PV1978.SUM

RECORD 3374 110 BYTES

*TS, 2A 12/31/78*

( 0)	03005056	4F209848	800EA748	07900000	00000000	00000000	00008E43	30230000	00000000	00000000
( 40)	00000000	00000000	00000000	00000000	00000000	00000000	00008149	4C0D2942	A2D2F444	D8E4BAC1
( 80)	FE6F3DC1	707A6347	14BE0B40	93550241	60C05E3F	8C971240	E56D0000	0000		

HEX DUMP OF PV1987.SUM

*Last file*

*488030*

RECORD 1

110 BYTES

*87,001 (1/1/87)*

( 0)	03005056	4F2DA748	<del>80EC1048</del>	160C0000	00000000	00000000	00002E45	D7E20000	00000000	00000000
( 40)	00000000	00000000	00000000	00000000	00000000	00000000	00008748	D0049042	DB2BBF44	EA010EC1
( 80)	F2B520C1	6ADDA446	E52BB040	EC4AA640	F5A8823F	C005A040	802E0000	0000		

HEX DUMP OF PV1987.SUM

RECORD 32854

110 BYTES

*87,305 (12/3/87)*

( 0)	03005056	4F2DAA48	<del>80A2A848</del>	75130000	00000000	00000000	00008B43	BF2B0000	00000000	00000000
( 40)	00000000	00000000	00000000	00000000	00000000	00000000	00002849	5B937D43	1BF0ED44	492918C2
( 80)	287265C1	98BC9748	830FAD44	F72D0044	0E3D5B41	6CF24540	C31E0000	0000		